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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,046	02/26/2004	Shinichi Takeshima	118849	5174
25944	7590	05/04/2006		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320				
EXAMINER WARTALOWICZ, PAUL A				
ART UNIT			PAPER NUMBER	
1754				
DATE MAILED: 05/04/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/786,046

Applicant(s)

TAKESHIMA, SHINICHI

Examiner

Paul A. Wartalowicz

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/22/04, 4/1/04</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Nawa et al. (U.S. 5863850).

Nawa et al. teach a process for making a zirconia based ceramic material (col. 1, lines 10-12) comprising the mixed oxide of cerium, titanium, and zirconium (col. 5, lines 63-66) wherein an aqueous solution of zirconium and cerium salts is mixed with an organic solution of an alkoxide of titanium to obtain a mixed solution (col. 6, lines 40-44) wherein the mixed solution is hydrolyzed to generate a precipitate (col. 6, lines 44-45) and then heated at a temperature of 800°C (col. 6, lines 34-36). This disclosure meets the limitation wherein a water-in-oil emulsion system or microemulsion system is used due to the explanation that mixing an organic phase with an aqueous phase will necessarily result in a water-in-oil type emulsion or microemulsion. As to the limitation wherein the size of the aqueous phase of the water-in-oil type microemulsion is in the range of 2-40 nm, Nawa et al. teach the process limitations of the claimed invention such that Nawa et al. inherently teach wherein the size of the aqueous phase of the water-in-oil type emulsion is in the range of 2-40 nm.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nawa et al. (U.S. 5863850) in view of Sherif (U.S. 5023071).

Nawa et al. teach a process for making a zirconia based ceramic material as described above in claim 1. Nawa et al. fail to teach wherein said organic phase having dissolved therein a zirconium alkoxide, wherein conducting said organic phase with said aqueous phase to produce a product of zirconium hydroxide by hydrolysis reaction of the zirconium alkoxide at their interface between said organic and aqueous phases while incorporating the zirconium element in the product.

Sherif, however, teaches a process for the formation of metal oxides from corresponding metal alkoxide by a hydrolysis reaction (col. 1, lines 9-11) wherein the process of initiating the hydrolysis of an alkoxide to form a metal oxide is applicable to

alkoxides of titanium or zirconium (col. 1, lines 60-65) for the purpose of forming metal oxide powders having better flow and density (col. 1, lines 55-58).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide wherein the process of initiating the hydrolysis of an alkoxide to form a metal oxide is applicable to alkoxides of titanium or zirconium (col. 1, lines 60-65) for the purpose of forming metal oxide powders having better flow and density (col. 1, lines 55-58) such that zirconium alkoxide is substituted for titanium alkoxide as taught by Sherif.

Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nawa et al. (U.S. 5863850) in view of Sherif (U.S. 5023071) and Uenishi et al. (U.S. 20020061816).

Nawa et al. teach a process for making a zirconia based ceramic material as described above in claim 1. The combined teachings of Nawa et al. and Sherif meet the claimed limitation wherein a process for production of an exhaust gas purification catalyst carrier by a production process such that characteristics of the product are inherently taught because the limitations of the process of making are disclosed. If Nawa et al. fail to teach wherein a process for production of an exhaust gas purification catalyst carrier by a production process, Uenishi et al., however, teach a process for purifying exhaust (paragraph 0004, lines 1-5) wherein a mixed oxide comprising zirconium and cerium are used as catalysts (paragraph 0008, lines 1-5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide wherein a mixed oxide comprising

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zirconium and cerium are used as catalysts (paragraph 0008, lines 1-5) as taught by Uenishi et al.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Wartalowicz whose telephone number is (571) 272-5957. The examiner can normally be reached on 8:30-6 M-Th and 8:30-5 on Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul Wartalowicz  
April 26, 2006



COLLEEN P. COOKE  
PRIMARY EXAMINER